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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,839	10/01/2001	Hsing Chen	MR2723-116	3966

4586 7590 11/05/2003

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EXAMINER

DONG, DALEI

ART UNIT PAPER NUMBER

2875

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,839

Applicant(s)

CHEN, HSING

Examiner

Dalei Dong

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/965,839.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: reference numeral 21. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,069,440 to Shimizu in view of U.S. Patent No. 5,836,676 to Ando.

Regarding to claims 1 and 2, Shimizu discloses in Figure 1, a light emitting diode 100 "is a lead type light emitting diode having a mount lead 105 and an inner lead 106, wherein a light emitting component 102 is installed on a cup 105a of the mount lead 105, and the cup 105a is filled with a coating resin 101 which contains a specified phosphor to cover the light emitting component 102 and is molded in resin. An n electrode and a p

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electrode of the light emitting component 102 are connected to the mount lead 105 and the inner lead 106, respectively, by means of wires 103" (column 8, line 35-44).

Shimizu also discloses in Figure 1, "in the light emitting diode constituted as described above, part of the light emitted by the light emitting component (LED chip) 102 (hereinafter referred to as LED light) excites the phosphor contained in the coating resin 101 to generate fluorescent light having a wavelength different from that of LED light, so that the fluorescent light emitted by the phosphor and LED light which is output without contributing to the excitation of the phosphor are mixed and output. As of result, the light emitting diode 100 also output light having a wavelength different from that of the LED light emitted by the light emitting component 102" (column 8, line 45-55).

However, Shimizu does not disclose a diffusion layer contain inorganic glass powder or polymeric material. Ando teaches in Figures 5 to 7, "All of the LED chips (40A, 40B) are coated with a protection material 15 such as silicon or epoxy resin. The protection material 15 is not only protecting the LED chips 40A, 40B but also expanding a critical angle for the LED chips 40A, 40B, so that an output light is increased up and a luminous efficiency of the LEDs is enhanced" (column 5, lines 35-41)

Ando also teaches in Figures 5 to 7, "the lens 5 has a lens main frame 5a which has a convex 5b at the outer bottom circumference thereof. The lens 5 is formed by a transparency plastic or a glass, and its shape is non-spherical to be approximately of an egg. The convex 5b is held by the groove 3d of the through hole 3c of the passive reflector 3 and is arranged in position on the surface of the luminous body board 2. Therefore, the lens 5 can be held without any fixing part such as an adhesive agent or a

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screw. In FIG. 6, the lens 5 expands the luminous light from the luminous body 4 in the direction of the luminous body row 4a (the X-Z plane). In FIG. 7, the lens 5 converges the luminous light from the luminous body 4 in the direction orthogonal to the luminous body row 4a (the Y-Z plane). If the lens 5 is formed by plastic, a predetermined shape is easily obtained, so that a predetermined light expanding and converging pattern can be designed and the lens 5 can be mass-produced. As a result, a visible angle of the display unit 1 is largely expanded in the horizontal direction" (column 5, lines 42-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilize the lens of Ando for the light emitting diode of Shimizu in order to increase output light and luminous efficiency of the light emitting diode.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior art are cited to further show the state of the art of composition of a light-emitting diode.

U.S. Patent No. 5,140,220 to Hasegawa.

U.S. Patent No. 5,865,529 to Yan.

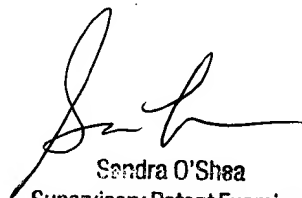
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (703)308-2870. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703)305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D.D.
October 31, 2003



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800